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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/917,438	07/27/2001	Fan Zhong	LWM-A102	9712
7590 12/08/2003				
WAGNER, MURABITO & HAO LLP Two North Market Street, Third Floor San Jose, CA 95113			EXAMINER COLEMAN, WILLIAM D	
			ART UNIT 2823	PAPER NUMBER

DATE MAILED: 12/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Applicati n No.

09/917,438

Applicant(s)

ZHONG ET AL.

Examiner

W. David Coleman

Art Unit

2823

-- Th MAILING DATE of this communication app ars on th cover she t with th correspondenc address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 15-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed October 6, 2003 have been fully considered but they are not persuasive.
2. Applicants contend that pointing out the negative limitation of preventing crystallization of a BPSG layer by doping the silica glass with Ge (germanium), P (phosphorus), and B (boron) because the prior art is silent to the limitation of preventing crystallization.
3. In response to Applicants contention that the applied art rejection fails to disclose the negative limitation of preventing crystallization is a moot argument. Applicants are implying because the references do not provide undue experimentation to determine the physical structure of the germanium doped BPSG glass of the prior art rejection that the claims as presented are allowable due to further research of the claimed process. Please note that Applicants do not provide any functional language to teach away from the prior art rejection.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell et al., U.S. Patent 5,648,175 in view of Akwani et al., U.S. Patent Application Publication No. US 2002/0154878 A1.

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6. Pertaining to claims 1, 7, 8 and 14, Russell discloses a semiconductor substantially as claimed. Russell teaches a method of depositing a top clad layer. The method comprising the steps of

a) providing a flow rate for a Ge dopant gas for a SiO<sub>2</sub> top clad layer deposition; b) providing a flow rate for a P dopant gas for the top clad layer deposition;

c) providing a flow rate for a B dopant gas for the top cladding layer deposition; and

d) controlling the flow rates for the Ge dopant gas, P dopant gas, and B dopant gas to form the top clad layer, to prevent the formation of crystallization areas within the top clad layer (i.e., since the prior art teaches forming a germanium doped phosphorus boron silicate glass, the process results in the prevention of the formation of crystallization areas). However, Russell fails to form an optical waveguide of a planar lightwave circuit. Akwani teaches forming an optical waveguide of a planar lightwave circuit. In view of Akwani, it would have been obvious to one of ordinary skill in the art to incorporate the optical waveguide in the Russell semiconductor process because planar optical devices are typically designed for use with silica optical telecommunications [0005].

7. Pertaining to claims 2 and 9, Russell teaches the method of claim 1, wherein the controlling of the flow rates for the Ge dopant gas, the P dopant gas, and the B dopant gas is configured to increase refractive index stability of the top clad layer across an anneal temperature range from 900C to 1050C.

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8. Pertaining to claim 3 and 10, Russell teaches the method of claim 1, wherein the controlling of the flow rates for the Ge dopant gas, the P dopant gas, and the B dopant gas is configured to reduce a number of deposition and anneal cycles required for depositing the top clad layer.

9. Pertaining to claims 4 and 11, Russell teaches the method of claim 1, wherein the B dopant gas comprises  $B_2H_6$  or  $B(OCH_3)_3$ , tetramethyl borate (TMB).

10. Pertaining to claims 5 and 12, Russell teaches the method of claim 1, wherein the Ge dopant gas comprises  $GeH_4$ ,  $Ge_2H_6$  or  $Ge(C_2H_5O)_4$ . (see column 5, line 21)

11. Pertaining to claims 6 and 14, Russell teaches the method of claim 1, wherein the P dopant gas comprises PH<sub>3</sub> or  $P(CH_3O)_3$  tetramethyl phosphite (TMP).

### ***Conclusion***

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

13. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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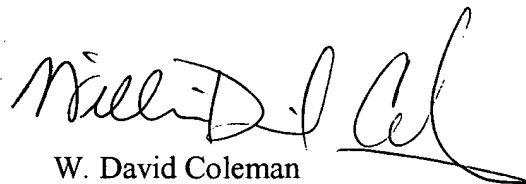
however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Coleman whose telephone number is 703-305-0004.

The examiner can normally be reached on 9:00 AM-5:00 PM.

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone number for the organization where this application or proceeding is assigned is 703-308-7722.

16. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in black ink, appearing to read 'W. David Coleman', with a stylized flourish at the end.

W. David Coleman  
Primary Examiner  
Art Unit 2823

WDC